Amendments to the Specification:

On page 1, after the title, insert the following:

CROSS-REFERENCE TO RELATED APPLICATION

This application is the U.S. national phase of PCT Appln. No. PCT/EP2005/002546 filed March 10, 2005, which claims priority to German application 10 2004 011 993.7 filed March 11, 2004.

BACKGROUND OF THE INVENTION

1. Field of the Invention

On page 1, before the paragraph beginning on line 11, please add the following:

2. Description of the Related Art

Please amend the paragraph on page 1, line 11, as shown below:

Annually, several ~~100 000~~ 100,000 tons of polymers are produced on the basis of polydimethylsiloxane (PDMS), ~~based on~~ containing an -(Si-O-Si)- repeating unit. A large part of these siloxanes passes into the environment during or after [[the]] use (textile industry, laundry detergent, paper industry, cosmetics, construction, pharmacy, agrochemicals, petrochemicals etc.). Siloxanes are polymers which do not occur naturally. To date, also, no biological processes are known which form or cleave an Si-C bond between a silicon atom and the carbon atom of a methyl group. Methods for the biological decomposition of siloxanes in wastewaters, e.g. in municipal sewage treatment plants or in wastewater treatment facilities of the chemical industry, in soils, sediments, sludges or other environmental compartments are not known.

Please amend the paragraph on page 2, line 32, as shown below:

Volatile low-molecular-weight decomposition products of PDMS are principally finally oxidized in the atmosphere; although combined biological and chemical decomposition under aerobic conditions is described (~~Graiver~~ Gravier et al. 2003), it is not of importance in practice, since the evaporation rate of volatile organosilicones is 2-20 times greater than the biological decomposition rate. Accumulation of low-molecular-weight organosilicones in soils and sediments which are close to the surface and well ventilated therefore does not take place, although in deeper sediment layers and non-ventilated soils, nevertheless, accumulation of such compounds can occur.

On page 3, before line 7, please insert the following heading:

SUMMARY OF INVENTION

Please amend the paragraphs on page 3, line 7 and line 15, as shown below:

It is an object of the present invention to provide a method by which a material comprising silicon-carbon single bonds, preferably polyorganosiloxanes[[,]] such as[[,]] ~~for example,~~ PDMS, [[or]] organofunctional siloxanes, or organosilanes, in particular organosilanols, or fragments formed by chemical depolymerization thereof can be biologically decomposed. ~~The object is~~ These and other objects are achieved by a method ~~which is characterized in that~~ wherein a mixture of a material comprising silicon-carbon single bonds and a microorganism population is incubated under anaerobic or microaerobic conditions with addition of an alternative electron acceptor.

On page 3, before line 22, please insert the following heading:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please amend the paragraph beginning on page 3, line 28, as shown below:

The compounds which can preferably be decomposed by the inventive method are preferably compounds of the formulae (1 to 3)

(1) $HO(SiR_2O)_pH$ where $p \geq 1$,

(2) $R_3SiO(SiR_2O)_qSiR_3$ where $q \geq 0$,

(3) $(SiR_2O)_r$ where $r = 3\text{-}10$, or

a mixed polymer of units of the formulae $HOR_2SiO_{1/2}$, $R_3SiO_{1/2}$, R_2SiO, $RSi(OH)O$, $RSiO_{3/2}$ and $HOSiO_{3/2}$, or an organosiloxane resin of units of the formula $[R_3SiO_{1/2}]$ and $[SiO_{4/2}]$, which further comprise additional Si-bound OH groups,

R, R_2 and R_3 each being able to be identical or different and being a monovalent, linear or cyclic, branched or unbranched, if appropriate substituted, hydrocarbon radical.

Please amend the paragraph beginning on page 4, line 6, as shown below:

An alternative electron acceptor is taken to mean an electron acceptor ~~except for~~ other than oxygen. The alternative electron acceptor can be an organic compound or an inorganic compound. It serves to transfer the electrons taken up by the microorganism population in the oxidation of an Si-R bond (R being a monovalent organic radical, preferably a monovalent alkyl or aryl radical) and thus to enable the microorganism population to produce energy from substrate oxidation in the context of anaerobic respiration.

Please amend the paragraph beginning on page 4, line 17, as shown below:

Organic alternative electron acceptors are, for example, fumarate or succinate. Inorganic alternative electron acceptors are, for example, oxidized iron ions, sulfate or nitrate. Preferably, for the inventive method, use is made of sulfate or nitrate, ~~particularly~~ most preferably nitrate.

Please amend the paragraph beginning on page 4, line 38, as shown below:

Microaerobic or anaerobic conditions can be achieved, for example, by technical methods such as gas exchange or chemical consumption of residual oxygen. Preferably, microaerobic or anaerobic conditions are produced by oxygen present being consumed by the microorganism population present, with [[and]] the feed of further oxygen being suppressed. ~~Particularly~~ Most preferably, the microaerobic or anaerobic conditions are achieved by the inventive method being carried out in a closed vessel such as, for example, a digestion tower in a sewage treatment plant.

Please amend the paragraph beginning on page 5, line 11, as shown below:

The microorganism population is preferably a population such as is present in sewage sludge or in a sewage treatment plant or in a soil sediment. Preferably, it is a microorganism population which grows under anaerobic conditions, ~~particularly~~ most preferably ~~displays~~ displaying optimal growth under these conditions.

Please amend the paragraph beginning on page 5, line 33, as shown below:

The method is preferably carried out at a temperature of 20°C to 80°C, more preferably at a temperature of 30°C to 70°C, and in particular ~~preferably~~ at a temperature of 40°C to 60°C.

Please amend the paragraph beginning on page 6, line 1, as shown below:

The incubation preferably proceeds over a period of 1 to 200 h, more preferably 10 to 150 h, in particular, over ~~preferably~~ 24 to 100 h.